



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/595,201

01/02/2007

Yoshitaka Nishio

49288.2800

4462

20322

7590

10/27/2009

SNELL & WILMER L.L.P. (Main)

400 EAST VAN BUREN

ONE ARIZONA CENTER

PHOENIX, AZ 85004-2202

EXAMINER

LEE, LAURA MICHELLE

ART UNIT

PAPER NUMBER

3724

MAIL DATE

DELIVERY MODE

10/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/595,201

Applicant(s)

NISHIO ET AL.

Examiner

LAURA M. LEE

Art Unit

3724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 46-51 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 and 16-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15, 19-22, and 46-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/22/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/22/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, Species A, claims 1-6, 10-15, 19-22 and 46-51 in the reply filed on 7/14/2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 7-9, 16-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/03/2009. Claim 6 was mistakenly withdrawn by the applicant. It has been examined with this office action, but its status identifier should be changed before the next office action.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the inspection system

(claims 50 and 51) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1 and 2 are objected to because of the following informalities:

Claim 1, lines 3, 4, and 10 should be changed from "scribing forming line means" to -- scribing line forming means--.

Claim 1, line 5 should be changed from "scribing forming means" to -- scribing line forming means--.

Claim 2, lines 3-4, should be changed from "a substrate supporting device being supporting by the scribing device guide body and moving together with the pair of scribing devices in the Y axial direction" to --a substrate supporting device supporting the scribing device guide body, and the scribing device guide body moving together with the pair of scribing devices in the Y axial direction.--

Claim 6, recites "a substrate supporting means" which is already set forth in claim 1. It is suggested to rename this support means to avoid confusion in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112 1st paragraph

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 3, recites that "the substrate supporting device does not ...exert any force on the substrate..." However, if the substrate is being supported by the supporting device then there are forces being exerted. The weight of the substrate is exerting a

force on the supporting device and the supporting device is exerting an equal yet opposite force on the substrate. It cannot be stated that the substrate support does not exert any force on the substrate and not be in violation of Newton's Third Law of Motion.

Claim Rejections - 35 USC § 112 2nd paragraph

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2-21, 46 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, line 1, recites, "a substrate supporting device being supporting by the scribing device guide body." As provided by the specification, the substrate supporting device is identified as 20 and the scribing device guide body is identified as 30. Looking at the drawings and from the specification it appears that the guide body is being supported by the supporting device and not the other way around as being claimed. It is therefore not completely understood, what the applicant intends. The claims have been examined as if claim 2 should read, --a substrate supporting device supporting the scribing device guide body, and the scribing device guide body moving together with the pair of scribing devices in the Y axial direction.—

Claim 10, recites "a substrate supporting means," it is not known which means is being referred to, the means of claim 1 or claim 6.

Claims 46 and 47, lines 1-3, respectively, recite that "wherein the plurality of belts is wound around between a frame on a carry-in side of the substrate and a frame on a carry-out side of the substrate. It is not understood what the applicant intends by this statement. Are the belts wound around in a location between the two frames or on the two frames? And if it is the location, then what are the belts wound around?

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-4, 13, and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al. (U.S. Patent 6,276,355), herein referred to as Zhang. Zhang discloses a substrate cutting system, comprising: a pair of scribing line forming means (grinding wheels, 202/220 capable of scribing a line) arranged facing each other; a pair of scribing devices (e.g. hub 204, 222; spindle fastener 206, 225;) for supporting the pair of scribing line forming means (202/220) such that one of the pair of scribing line forming means moves on a first surface of a substrate in an X axial direction and the other of the pair of scribing line forming means moves on a second surface of the substrate in the X axial direction; a scribing device guide body (carriage 40) for supporting the pair of scribing devices such that the pair of scribing devices moves in a

Y axial direction; and a substrate supporting means (frame 12) for supporting the substrate in an X-Y plane such that the pair of scribing forming line means scribes the first surface of the substrate and the second surface of the substrate.

As best understood, in regards to claim 2, Zhang discloses wherein the substrate supporting means (12) includes a substrate supporting device (16) supporting the scribing device guide body (40) and the body moving together with the pair of scribing devices (204,222, 206, 225) in the Y axial direction; and a fixing device (clamps, 18) for fixing the substrate in the X-Y plane.

As best understood, in regards to claim 3, Zhang discloses wherein the substrate supporting device (16) supports the substrate such that the substrate supporting device does not rub the substrate or exert any force on the substrate when the pair of scribing devices (204/222/206/225) and the scribing device guide body (40) move in the Y axial direction.

In regards to claim 4, Zhang discloses wherein the substrate supporting device (16) includes a first substrate supporting section (left side) being provided on one side of the substrate supporting device with respect to a moving direction of the scribing device guide body (see Fig. 2).

In regards to claim 13, Zhang discloses wherein the substrate supporting device (16) includes a second substrate supporting section (left side) being provided on another side of the substrate supporting device with respect to a moving direction of the scribing device guide body (see Fig. 2). Applicant has not distinguished in the claim tree that the first and second substrate supporting devices are actually two separate

devices and not the same device being claimed in one instance as the first and in another instance as the second.

In regards to claim 48, Zhang discloses that the workpiece is a multilayered sheet 60. The material being cut is not being positively claimed and so does not structurally distinguish over Zhang's apparatus. Zhang's apparatus is capable of scribing a line in a bonded mother substrate and therefore anticipates the claimed limitations.

11. Claims 1-4, 13, 48-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Ueyama et al. WO02/057192), herein referred to as Ueyama; see Publication 2004/0040997 for English translation. Ueyama discloses a substrate cutting system, comprising: a pair of scribing line forming means (102/103) arranged facing each other; a pair of scribing devices (105/106) for supporting the pair of scribing line forming means such that one of the pair of scribing line forming means moves on a first surface of a substrate in an X axial direction and the other of the pair of scribing line forming means moves on a second surface of the substrate in the X axial direction; a scribing device guide body (122/123) for supporting the pair of scribing devices such that the pair of scribing devices moves in a Y axial direction; and a substrate supporting means (5) for supporting the substrate in an X-Y plane such that the pair of scribing forming line means scribes the first surface of the substrate and the second surface of the substrate.

As best understood, in regards to claim 2, Ueyama discloses wherein the substrate supporting means (5) includes a substrate supporting device (5) supporting the scribing device guide body (122/123) and the body moving together with the pair of scribing devices (105/106) in the Y axial direction; and a fixing device (clamps, 31) for fixing the substrate in the X-Y plane.

As best understood, in regards to claim 3, Ueyama discloses wherein the substrate supporting device (5) supports the substrate such that the substrate supporting device does not rub the substrate or exert any force on the substrate when the pair of scribing devices (204/222/206/225) and the scribing device guide body (40) move in the Y axial direction.

In regards to claim 4, Ueyama discloses wherein the substrate supporting device (5) includes a first substrate supporting section (top side) being provided on one side of the substrate supporting device with respect to a moving direction of the scribing device guide body (see Fig. 2).

In regards to claim 13, Ueyama discloses wherein the substrate supporting device (5) includes a second substrate supporting section (top side) being provided on another side of the substrate supporting device with respect to a moving direction of the scribing device guide body (see Fig. 2). Applicant has not distinguished in the claim tree that the first and second substrate supporting devices are actually two separate devices and not the same device being claimed in one instance as the first and in another instance as the second.

In regards to claim 48, Ueyama discloses wherein the workpiece is a bonded mother substrate (8).

In regards to claim 49, Ueyama discloses a substrate cutting system according to claim 1 and a chamfering system (67).

In regards to claim 50, Ueyama discloses a substrate cutting system according to claim 1 and an inspection system (paragraph [0098]).

In regards to claim 51, Ueyama discloses an inspection system (paragraph [0098]).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 5-6, 10-12, 14-21, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueyama et al. WO02/057192), herein referred to as Ueyama; see Publication 2004/0040997 for English translation in view of Cunningham (U.S. Patent 6,202,524). Ueyama discloses that the substrate can be moved in to position utilizing either a motorized table 5b, or a plurality of rollers, 115, but does not disclose a series of belts to support the movement of the substrate. However, attention is directed to the Cunningham glass positioning system which utilizes a series of belts to move the glass sheet into the desired position relative to the cutting device which can be

retrofitted on existing cutting tables. One having ordinary skill in the art at the time of the invention would have found it obvious to substitute the motorized mechanism of the Cunningham belt system for a motorized table such as taught by Ueyama as both systems allow for the transport and positing of the glass workpiece relative to the cutter system, while Cunningham provides for an improved sensory positing system.

Therefore, in regards to claim 5, the modified device of Ueyama discloses wherein the first substrate supporting section includes a plurality of first substrate supporting units (conveyor belts; Cunningham 54) substrate supporting units moving in parallel along the moving direction of the scribing device guide body, and the plurality of first substrate supporting units (conveyor belts; Cunningham 54) moves together with the scribing device guide body (122/123) along with the movement of the scribing device guide body.

In regards to claim 6, the modified device of Ueyama discloses wherein the first substrate supporting unit (conveyor belts; Cunningham 54) includes a substrate supporting means (top surface) for supporting the substrate.

In regards to claim 10, the modified device of Ueyama discloses wherein the substrate supporting means is a plurality of belts (conveyor belts; Cunningham 54).

In regards to claim 11, the modified device of Ueyama discloses at least one rotation transmission means (Cunningham common drive; col. 3, lines 27-30) for circling the plurality of belts in accordance with the movement of the scribing device guide body.

In regards to claim 12, the modified device of Ueyama discloses a control section (Cunningham controller, 64) for circling the plurality of belts using a motor (common drive motor) in accordance with the movement of the scribing guide body.

In regards to claim 14, the modified device of Ueyama discloses wherein the second substrate supporting section includes a plurality of second substrate supporting units (conveyor belts; Cunningham 54) substrate supporting units moving in parallel along the moving direction of the scribing device guide body, and the plurality of second substrate supporting units (conveyor belts; Cunningham 54) moves together with the scribing device guide body (122/123) along with the movement of the scribing device guide body. Applicant has not distinguished in the claim tree that the first and second substrate supporting devices are actually two separate devices and not the same device being claimed in one instance as the first and in another instance as the second.

In regards to claim 15, the modified device of Ueyama discloses wherein the first substrate supporting unit (conveyor belts; Cunningham 54) includes a substrate supporting means (top surface) for supporting the substrate.

In regards to claim 19, the modified device of Ueyama discloses wherein the substrate supporting means is a plurality of belts (conveyor belts; Cunningham 54).

In regards to claim 20, the modified device of Ueyama discloses at least one rotation transmission means (Cunningham common drive; col. 3, lines 27-30) for circling the plurality of belts in accordance with the movement of the scribing device guide body.

In regards to claim 21, the modified device of Ueyama discloses a control section (Cunningham controller, 64) for circling the plurality of belts using a motor (common drive motor) in accordance with the movement of the scribing guide body.

As best understood, in regards to claim 46, Ueyama discloses wherein the plurality of belts (conveyor belts; Cunningham 54) is wound around between a frame on a carry-in side of the substrate and a frame on a carry-out side of the substrate, and the plurality of belts lowers below the scribing device guide body or emerges above the scribing device guide body from under the scribing device guide body while the first substrate supporting section is moving.

As best understood, in regards to claim 47, Ueyama discloses wherein the plurality of belts (conveyor belts; Cunningham 54) is wound around between a frame on a carry-in side of the substrate and a frame on a carry-out side of the substrate, and the plurality of belts lowers below the scribing device guide body or emerges above the scribing device guide body from under the scribing device guide body while the first substrate supporting section is moving.

14. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueyama et al. WO02/057192), herein referred to as Ueyama; see Publication 2004/0040997 for English translation in view of Yoshikuni et al. (U.S. Patent 6,402,004). Ueyama discloses the claimed invention except that the scribing devices each includes a cutter head for transmitting a pressing force if the scribing force means onto the substrate using a servo motor. However, servo motors are old and well known in the art for use

as a feedback system to relay the actual output of the device. Similarly, in a scribing device, feedback systems relay the force of the cutter head being exerted on the substrate relative to the force being dictated by the operator or control unit. The servo motor allows for instant correction and maintenance of the output value. Attention is also directed to the Yoshikuni glass plate cutting device which uses a servo motor to control the pressing force of the cutter. It would have been obvious to one having ordinary skill in the art at the time of the invention to have utilized a force feedback means such as a servo motor in the cutter head of Ueyama to better control the pressure exerted by the cutting heads as taught by Yoskikuni.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA M. LEE whose telephone number is (571)272-8339. The examiner can normally be reached on Monday through Friday, 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura M Lee/
Examiner, Art Unit 3724
10/26/2009